

CLAIMS

5 What is claimed is:

1. A method in a data processing system for executing instructions, the method comprising:

10 executing instructions in a processor in the data processing system;
 detecting indicators during execution of the instructions, wherein the indicators are data values in memory that specify counting of events that are associated with execution of the instructions or are data
15 values in memory that specify counting of events that are associated with accesses to memory locations;
 counting events that occur within the data processing system as specified by the indicators;
 retrieving a count value that represents counted
20 events; and
 relocating one or more memory blocks that include the instructions or that include the memory locations based on the count value.

25 2. The method of claim 1 wherein the step of relocating one or more memory blocks further comprises:

 moving one or more memory blocks to be closer to other memory blocks that are relatively frequently accessed.

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3. The method of claim 1 wherein the step of relocating one or more memory blocks further comprises:

5 moving one or more memory blocks to be closer to other memory blocks that are relatively infrequently accessed.

4. The method of claim 1 wherein the events are counted for a specified period of time.

10 5. The method of claim 1 further comprising:
splitting a memory block prior to relocating the memory block.

15 6. The method of claim 1 further comprising:
marking instructions or memory locations with indicators within a memory space for a running application.

7. A computer program product on a computer readable medium for use in a data processing system that executes instructions, the computer program product comprising:

5 means for executing instructions in a processor in the data processing system;

means for detecting indicators during execution of the instructions, wherein the indicators are data values in memory that specify counting of events that are associated with execution of the instructions or are data
10 values in memory that specify counting of events that are associated with accesses to memory locations;

means for counting events that occur within the data processing system as specified by the indicators;

15 means for retrieving a count value that represents counted events; and

means for relocating one or more memory blocks that include the instructions or that include the memory locations based on the count value.

20 8. The computer program product of claim 7 wherein the means for relocating one or more memory blocks further comprises:

means for moving one or more memory blocks to be closer to other memory blocks that are relatively
25 frequently accessed.

9. The computer program product of claim 7 wherein the means for relocating one or more memory blocks further comprises:

5 means for moving one or more memory blocks to be closer to other memory blocks that are relatively infrequently accessed.

10. The computer program product of claim 7 wherein the events are counted for a specified period of time.

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11. The computer program product of claim 7 further comprising:

means for splitting a memory block prior to relocating the memory block.

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12. The computer program product of claim 7 further comprising:

20 means for marking instructions or memory locations with indicators within a memory space for a running application.

13. An apparatus in a data processing system that executes instructions, the apparatus comprising:

means for executing instructions in a processor in the data processing system;

5 means for detecting indicators during execution of the instructions, wherein the indicators are data values in memory that specify counting of events that are associated with execution of the instructions or are data values in memory that specify counting of events that are associated with accesses to memory locations;

10 means for counting events that occur within the data processing system as specified by the indicators;

means for retrieving a count value that represents counted events; and

15 means for relocating one or more memory blocks that include the instructions or that include the memory locations based on the count value.

14. The apparatus of claim 13 wherein the means for relocating one or more memory blocks further comprises:

20 means for moving one or more memory blocks to be closer to other memory blocks that are relatively frequently accessed.

25 15. The apparatus of claim 13 wherein the means for relocating one or more memory blocks further comprises:

means for moving one or more memory blocks to be closer to other memory blocks that are relatively infrequently accessed.

16. The apparatus of claim 13 wherein the events are counted for a specified period of time.

17. The apparatus of claim 13 further comprising:
5 means for splitting a memory block prior to
relocating the memory block.

18. The apparatus of claim 13 further comprising:
means for marking instructions or memory locations
10 with indicators within a memory space for a running
application.